

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No: 10/685,354
Examiner: Thomas, Jason M.
Art Group: 2423
Reference No.: BPCUR0006MC (C-40)
Appn. Filed: October 10, 2003
Applicants: Michael Chen
Title: Method, Apparatus, and System for Preparing Images for
Integration and Combining Images into an Integrated Image

February 9, 2012

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

Applicant hereby requests review of the final rejections to the independent claims set forth in the above-identified application. The reasons set forth below frame the issue to be considered as part of the pre-appeal review process.

Claims 1-66 are pending in this application. Claims 1-66 are rejected under 35 USC §103(a) as being obvious in view of Gordon et al., US Published Patent Application No. 2003/0028879, hereinafter “Gordon,” in view of Nadan, US Pat. No. 5,321,750, further in view of Chen, US Pat. No. 6,141,442.

As set forth below, Applicant respectfully submits that the combination of Gordon, Nadan, and Chen fails make known or obvious each and every limitation of Applicant’s independent claims. To the contrary, the combination teaches away from Applicant’s independent claims by failing to teach preclusion of compression of portions of an image.

ARGUMENT:

Using claim 1 as an example that illustrates the limitations of Applicant's independent claims, this claim as amended recites, *inter alia*, the following:

- forming a first compressed image [received as an analog signal and converted to a digital image];
- from a portion of a first image area by representing at least one segment of the first image within the portion with a reference to another segment of the first image within the portion; and
- *precluding compression of portions of the first image complementary to the portion.*

Applicant respectfully submits that the combination of Gordon, Nadan, and Chen fails to make known or obvious these limitations. To wit, the combination of Gordon, Nadan, and Chen fails to make known or obvious compression occurring from a portion of an image with the remainder of the image being precluded from compression. To the contrary, the combination of Gordon, Nadan, and Chen teaches compression of entire images without any preclusion of compression whatsoever.

Beginning with Gordon, Gordon teaches encoding an entire image without any preclusion. See, e.g., Gordon at paragraph [0070]. While portions of Gordon's images can be encoded separately, e.g., a video portion and a grid portion, for optimization "to best encode the associated portion," it is clear from Gordon's disclosure that the entire image is encoded. Gordon at paragraph [0050]. See also Gordon at paragraph [0088].

Nadan teaches encoding complete images as well. In Nadan, the encoder (312) receives video signals (Nadan, col. 38, lines 30-33) and fully encodes each frame. While image updates can be based upon "pixel change data," the changes are determined from fully encoded images. Nadan, col. 46, lines 28-50 and col. 47, lines 44-58. While tiles can be used to create layered images, each tile is fully encoded. Nadan, col. 57, lines 10-22. Thus, when Nadan is combined with Gordon, each image is fully encoded.

Applicant respectfully notes that both points above were established in a response filed August 1, 2011, when claims 1-66 were rejected in view of Gordon, Nadan, and

Plotnick et al., US Pat. No. 7,440,674, hereinafter “Plotnick.” In response to this filing, the Examiner removed the Plotnick reference and replaced it with Chen. In the most recent Office Action, the Examiner argues that the addition of Chen to Gordon and Nadan corrects the deficiencies of the base combination because “Chen teaches isolating portions of a first image by performing specialized coding on only a portion of an image, referred to as segmented regions, and precluding said coding on portions complementary to the portions of interest.” Final Office Action, page 3. Applicant respectfully disagrees. Chen, like Gordon, never teaches preclusion of encoding for portions of an image. To the contrary, Chen teaches only omission of data, compression of data, and truncation of data. Chen, col. 6, lines 13-17.

Throughout its disclosure, Chen refers to “frame data” and “region data.” A video sequence is made of a series of frames. Chen, col. 5, lines 15-19. A region is an object depicted in a frame. Chen, col. 5, lines 19-20. Examples of regions can include a black car or a white background appearing in a frame. Chen, col. 5, lines 35-38.

As set forth by Chen at col. 5, lines 45-52, “The transmitter 310 of the present invention is operative to transmit the frame data for the video sequence f.sub.0 as a bitstream over a *channel of limited bandwidth* to the receiver 312. The limited bandwidth of the channel, however, *imposes a restriction on the rate the frame data* for the video sequence f.sub.0 is transmitted to the receiver 312 and subsequently generated onto a display.” Emphasis added. To deal with this limited bandwidth situation, Chen employs a two-step encoder. Chen, col. 6, lines 1-12.

The first step of the encoder to reduce the amount of frame data is “selective omission of frame data.” Chen, col. 6, lines 19-20. The selective omission of frame data means transmitting “...the frame data for every other video frame in the video sequence...” with other frames being completely omitted. Chen, col. 6, lines 23-26.

The second step is compression. Chen, col. 6, lines 37-38. According to Chen, “Compression involves encoding *the frame data* for the video frames such that less information is required to define the same video frames.” Chen, col. 6, lines 38-40. Note that it is the *frame* that is encoded, not a selective region. Chen continues, “Suppose, for example, the *frame data* for the video frame 402 and 406 were compressed fit (sic) percent by the encoder 306, thus making the *frame data* for those video frames forty bits

each. The *frame data* for the video frame 406 can now be completely transmitted one-half of a second after the complete transmission of the frame data for the video frame 402.” Chen, col. 6, lines 41-47. Note that Chen refers to complete transmission of a compressed *frame*, not a region.

The “image segmenting” to which the Examiner refers has nothing to do with preclusion of compression. Image segmenting relates to the creation of “region *frames*” to improve video quality. Chen, col. 7, lines 8-18. Region frames “...are generated from the video frames using the image segmenter 302 and the color replacer 304.” *Id.*

With Chen’s image segmenting, images are mapped with a 1 or 2 to indicate separate regions. Chen, col. 7, lines 20-47. “The image segmenter 302 replaces the pixel values that constitute the frame data for video frames with values indicative of the region to which they belong.” Chen, col. 7, lines 34-37. As shown in FIG. 7, the region frames comprise an entire frame, with all regions being encoded with a 1 or 2. The output is a map. Chen, col. 7, lines 46-48.

The compression of subject regions, i.e., the “1’s” of FIG. 7, can then be maximized relative to non-subject regions because non-subject regions, i.e., the “2’s” of FIG. 7, are flattened via Chen’s color replacement and pixel replacement. Chen, col. 8, lines 30-34, and col. 9, lines 8-25. The color replacer uses the map to segment each frame, recolor its various regions, and categorize the same. Chen, col. 7, lines 50-55 and 62-64. This is shown in FIG. 8. The entire frame is then compressed. Compression is enhanced because the non-subject regions are “flattened” via the pixel and color replacement. Col. 8, lines 30-34.

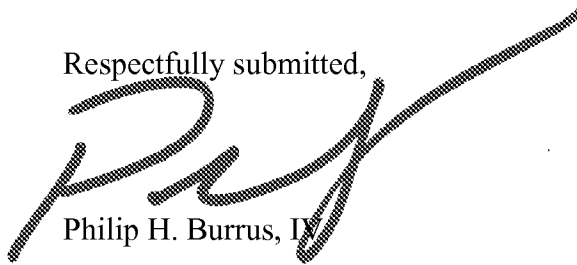
Chen never teaches that the non-subject regions are not compressed. To the contrary, frames are completely compressed with subject region compression being maximized and non-subject region compression being streamlined due to the flattening. However, it is clear from the specification and figures of Chen that all regions of all frames are always compressed. Preclusion of compression is never taught in Chen’s disclosure. Applicant has searched the specification of each of the references, including the portions relied upon by the Examiner, and is unable to find any teaching whatsoever of forming a compressed image for integration into a second image, where the first image

is formed from compressing only a portion of that image and precluding compression of all portions complementary to the portion of interest.

As none of the references, alone or in combination, make known or obvious each and every limitation of Applicant's independent claims, Applicant respectfully submits the rejection is overcome. Applicant respectfully submits that claims 1-66 are in condition for allowance, and respectfully request withdrawal of the rejections in view of Gordon, Nadan, and Chen.

In view of the comments above, withdrawal of the rejection is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "P. Burrus, II", is written over the typed name.

Philip H. Burrus, II

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